I CLAIM:

1. An improvement to a spread-spectrum receiver at a base station in a direct-sequence code-division-multiple-access (DS-CDMA) system having a plurality of spread-spectrum signals with each spread-spectrum signal in the plurality of spread-spectrum signals having a chip-sequence signal lasting a symbol time T_s, and with each chip-sequence signal different from other chip-sequence signals used by other spread-spectrum signals in the plurality of spread-spectrum signals, with the spread-spectrum receiver including despreading means for detecting a desired spread-spectrum signal in the plurality of spread-spectrum signals arriving at the spread-spectrum receiver, the improvement comprising:

a symbol sampler, coupled to said matched filter, for sampling at a plurality of symbol times nT_s, where n is an index to each symbol time, a plurality of symbol samples;

a noise sampler, coupled to said matched filter, for sampling a plurality of noise samples at any of before, after, and a combination of before and after each symbol sample, at a plurality of chip times kT_c, but not at the plurality of symbol times nT_s;

a low-pass filter, coupled to said noise sampler, for filtering the plurality of noise samples, to generate a noise estimate corresponding to a particular symbol sample in the plurality of symbol samples;

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a combiner circuit, coupled to said low-pass filter and to said symbol sampler, for subtracting the noise estimate from the particular symbol sample, thereby generating a comparison signal;

a magnitude device, coupled to said combiner circuit, for determining a magnitude of the comparison signal; and

a comparator, coupled to said magnitude device and having a threshold voltage applied to a threshold input, for comparing the magnitude of the comparison signal to the threshold voltage, thereby generating the erasure signal; and

an erasure decoder, having an erasure input coupled to said comparator and a data input coupled to said symbol sampler, responsive to the erasure signal for erasure decoding the symbol sample.

2. An improvement to a spread-spectrum receiver in a direct-sequence code-division-multiple-access (DS-CDMA) system having a plurality of spread-spectrum signals with each spread-spectrum signal in the plurality of spread-spectrum signals having a chip-sequence signal lasting a symbol time T_s, and with each chip-sequence signal different from other chip-sequence signals used by other spread-spectrum signals in the plurality of spread-spectrum signals, with the spread-spectrum receiver including despreading means for detecting a desired spread-spectrum signal in the plurality of spread-spectrum signals

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arriving at the spread-spectrum receiver, the improvement comprising:

sampler means, coupled to said matched filter, for sampling at a plurality of symbol times nT_S, a plurality of symbol samples;

said sampler means for sampling at any of before, after, or a combination of before and after each symbol sample from a plurality of symbol samples, at a plurality of chip times kT_C, but not at the plurality of symbol times nT_S, a plurality of noise samples;

estimate means, coupled to said sampler means, for processing, from the plurality of noise samples, a noise estimate corresponding to the particular symbol sample;

comparator means, coupled to said estimate means, for comparing the noise estimate with the particular symbol sample, to generate an erasure signal; and

an erasure decoder, having an erasure input and a data input, with the erasure input coupled to the said comparator means, and with the data input coupled to said sampler means, for erasure decoding the symbol sample using the erasure signal.

3. The improvement as set forth in claim 2 with said sampler means including:

a noise sampler, coupled to said matched filter, for sampling at the plurality of chip times kT_C, but not at the

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plurality of symbol times nT_c, the plurality of noise samples; and

a symbol sampler, coupled to said matched filter, for sampling at the plurality of symbol times nT_s, the plurality of symbol samples.

4. The improvement as set forth in claim 2, with said estimate means including a low-pass filter, coupled to said sampler means, for filtering the plurality of noise samples, to generate the noise estimate.

5. The improvement as set forth in claim 3, with said estimate means including a low-pass filter, coupled to said noise sampler, for filtering the plurality of noise samples, to generate the noise estimate.

6. The improvement as set forth in claim 2, with said comparator means including:

a combiner circuit, coupled to said estimate means and to said sampler means, for subtracting the noise estimate from the symbol sample, thereby generating a comparison signal;

a magnitude device, coupled to said combiner circuit, for determining a magnitude of the comparison signal; and

a comparator, coupled to said magnitude device and to said erasure decoder, and having a threshold voltage applied to

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a threshold input, for comparing the magnitude of the comparison signal to the threshold voltage, thereby generating the erasure signal.

7. The improvement as set forth in claim 3, with said comparator means including:

a combiner circuit, coupled to said estimate means and to said symbol sampler, for subtracting the noise estimate from the symbol sample, thereby generating a comparison signal;

a magnitude device, coupled to said combiner circuit, for determining a magnitude of the comparison signal; and

a comparator, coupled to said magnitude device and to said erasure decoder, and having a threshold voltage applied to a threshold input, for comparing the magnitude of the comparison signal to the threshold voltage, thereby generating the erasure signal.

8. The improvement as set forth in claim 1, further including:

a noise-magnitude device, coupled between said low-pass filter and said combiner circuit, for determining a magnitude of the noise estimate;

a symbol-magnitude device, coupled between said symbol sampler and said combiner circuit, for determining a magnitude of the symbol sample; and

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said combiner circuit for subtracting the magnitude of the noise estimate from the magnitude of the symbol sample, thereby generating the comparison signal.

9. The improvement as set forth in claim 2, further including:

a noise-magnitude device, coupled between said estimate means and said comparator means, for determining a magnitude of the noise estimate;

a symbol-magnitude device, coupled between said sampler means and said comparator means, for determining a magnitude of the symbol sample; and

said combiner circuit for subtracting the magnitude of the noise estimate from the magnitude of the symbol sample, thereby generating the comparison signal.

10. A method for improving a spread-spectrum receiver in a direct-sequence code-division-multiple-access (DS-CDMA) system having a plurality of spread-spectrum signals with each spread-spectrum signal in the plurality of spread-spectrum signals having a chip-sequence signal lasting a symbol time T_s, and with each chip-sequence signal different from other chip-sequence signals used by other spread-spectrum signals in the plurality of spread-spectrum signals, with the spread-spectrum receiver including despreading means for detecting a desired spread-

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spectrum signal in the plurality of spread-spectrum signals arriving at the spread-spectrum receiver, the improvement comprising the steps of:

sampling at a plurality of symbol times nT_s, a plurality of symbol samples;

sampling, for each symbol sample, at a plurality of chip times kT_c, but not at the plurality of symbol times nT_s, a plurality of noise samples;

processing the plurality of noise samples, to generate a noise estimate;

subtracting the noise estimate from the symbol sample, thereby generating a comparison signal;

determining a magnitude of the comparison signal;

comparing the magnitude of the comparison signal to a threshold voltage, thereby generating the erasure signal; and

erasure decoding a plurality of symbol samples using a plurality of erasure signals.

11. A method for improving a spread-spectrum receiver in a direct-sequence code-division-multiple-access (DS-CDMA) system having a plurality of spread-spectrum signals with each spread-spectrum signal in the plurality of spread-spectrum signals having a chip-sequence signal lasting a symbol time T_s, and with each chip-sequence signal different from other chip-sequence signals used by other spread-spectrum signals in the plurality

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of spread-spectrum signals, with the spread-spectrum receiver including despreading means for detecting a desired spread-spectrum signal in the plurality of spread-spectrum signals arriving at the spread-spectrum receiver, the improvement comprising the steps of:

sampling at a plurality of symbol times nT_s, a plurality of symbol samples;

sampling, for each symbol sample, at a plurality of chip times kT_c, but not at the plurality of symbol times nT_s, a plurality of noise samples;

estimating, from the plurality of noise samples corresponding to a particular symbol sample, a noise estimate;

comparing the noise estimate with the symbol sample, to generate an erasure signal; and

erasure decoding the symbol sample using the erasure signal.

12. The method as set forth in claim 11, with the step of estimating including the step of low-pass filtering the plurality of noise samples, to generate a noise estimate.

13. The method as set forth in claim 11, with the step of comparing including the steps of:

subtracting the noise estimate from the symbol sample, thereby generating a comparison signal;

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determining a magnitude of the comparison signal; and

comparing the magnitude of the comparison signal to the threshold voltage, thereby generating the erasure signal.

14. The method as set forth in claim 12, with the step of comparing including the steps of:

subtracting the noise estimate from the symbol sample, thereby generating a comparison signal;

determining a magnitude of the comparison signal; and

comparing the magnitude of the comparison signal to the threshold voltage, thereby generating the erasure signal.

15. The method as set forth in claim 10, further including the step of:

determining a magnitude of the noise estimate;

determining a magnitude of the symbol sample; and

subtracting the magnitude of the noise estimate from the magnitude of the symbol sample, thereby generating the comparison signal.

16. The method as set forth in claim 11, further including the step of:

determining a magnitude of the noise estimate;

determining a magnitude of the symbol sample; and

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subtracting the magnitude of the noise estimate from the magnitude of the symbol sample, thereby generating the comparison signal.

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